State-Wide Rational Service Areas for Primary Care Services: Lessons from Six States

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EXECUTIVE SUMMARY

The objective of this report is to document and summarize methods, approaches, and rationale used to establish rational service areas (RSA) for primary care services. The report is intended to be used by States contemplating establishing a State-wide system of rational service areas. It is a way for the latter to learn from the experiences of States that have established RSAs. Six States with experience in establishing RSAs were surveyed. The various methods, experiences, and results reported by Arizona, California, Maine, Minnesota, Montana, and Washington form the basis of the report. The project was motivated by the fact that the Proposed Rules for designation of Health Professional Shortage Areas (HPSA) and Medically Underserved Areas and Populations (MUA/P) encourage each State to divide its territory into rational service areas for the delivery of primary care.

A rational service area for primary care is a relatively self-contained geographic unit with respect to the provision of primary care services. The area reflects utilization patterns for primary care. In other words, an area within which most residents could or do seek and obtain most of their primary care.

Chapter 1 summarizes the legislative and research history of rational service areas. The history dates from the 1970=s and interest continues as evidenced by the HPSA and MUA/P rules and the current project of the Center for the Evaluative Clinical Sciences at Dartmouth ADevelopment and Evaluation of Primary Care Service Areas@.

Chapter 2 describes the content and use of the State survey and Chapter 3 discusses the concept of RSAs and their value in better identifying and addressing the major health needs. Chapter 3 also summarizes the responses from each of the six States. Each State summary addresses the background, criteria for establishing RSAs, data used, and, use and usefulness of RSAs.

Chapter 4 gleans the most salient lessons from the six States including:

- importance, composition, and use of an advisory group of stakeholders,
- factors to consider in deciding on an approach,
- data gathering, sources, and use especially being sure that data is available for criteria, and
- the importance of continuous monitoring and updating.

Chapter 5 provides specific advice and comments on the worth of establishing RSAs including issues not to overlook: clarity of purpose, broad involvement of stakeholders, and the need for flexibility. Minnesota and Montana started their RSA efforts relatively recently thus were unable to judge the worthiness of the effort. Of the remaining four states, three felt the effort worthwhile for ease of shortage designation. Only Washington questioned the worthiness.

Chapter 6 addresses the importance of relying on publicly available data and of the collection and storage of data being done by a public entity such as state government to insure public scrutiny and accuracy.

Chapter 1: BACKGROUND

A rational service area (RSA) for primary care is a relatively self-contained geographic unit that reflects utilization patterns for primary care. It is an area within which most area residents could or do seek and obtain most of their primary care health services. RSAs are established to be able to better identify the major health needs and explore ways to meet those needs.

The idea of rational service areas dates back to the 1970=s when the United States was divided into Health Service Areas as part of the State Health Planning and Resource Development Act of 1974., The establishment of RSAs is called for in Health Professional Shortage Area (HPSA) legislation. Section 332. [254e] (a)(1) of the U.S. Public Health Service Act, ADesignation of Health Professional Shortage Areas@ reads

> *AFor purposes of this subpart the term Ahealth professional shortage area@ means (A) an area in an urban or rural area (which need not conform to the geographic boundaries of a political subdivision and which is a rational service area of the delivery of health services)Y@*

The HPSA rules describe rational areas for the delivery of primary care services as:

- A county or a group of contiguous counties whose population centers are within 30 minutes travel time of each other.
- A portion of a county, or an area made up of portions of more than one county, whose population, because of topography, market or transportation barriers, distinctive population characteristics, has limited access to contiguous area resources, as generally measured by a travel time greater than 30 minutes to such resources.
- Established neighborhoods and communities within metropolitan areas which display a strong self-identity (as indicated by a homogeneous socioeconomic or demographic structure and/or a tradition of interaction or interdependency), have limited interaction with contiguous areas, and which, in general, have a minimum population of 20,000.

The AReport on Development of Criteria for Designation of Health Manpower Shortage Areas@ discussed the importance of travel time and minimum population of rational areas for the delivery of primary care medical services. In 1980, the AEvaluation

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[1] Transactions Systems Inc. AEvaluation of Alternative Health Area Definitions Methods@. DHEW Contract No. HRA230-75-0080. 1976

[2] Makuc DM et al. AHealth Service Areas for the United States@. National Center for Health Statistics. Vital Health Stat (2) 112. 1991.

[3] 42 CFR ' 332. [254e] (a)(1)

[4] 42 CFR ' 332. [254e] (a)(1)

[5] Report on Development of Criteria for Designation of Health Manpower Shortage Areas, BHM/OPD/MAB, October, 1977,

of Health Manpower Shortage Area Criteria@ devoted a chapter to the definition of rational service areas. This report reviewed the literature pertaining to health services market area definition focussing on central place theory and its use for defining physical boundaries of medical markets. A number of implications for RSAs were suggested.

> *First, a rational service area should include all providers who serve a common group of patients. Given that patients usually establish a relationship with a single provider of a specific type of health service and do not use a different provider each time a problem arises, it probably makes most sense to define the commonality of the patients in geographic termsCthat is, as a recognizable geographic entity. Second, the size of that geographic area will not be constant over all parts of the country. Depending on population density, per capita income, and other factors that determine the density of demand, the areal size of a market area for a given service may be larger or smaller. Third, there is likely to be a hierarchy of market areas for health services: the health services used frequently have many relatively small market areas, and those used rarely have the fewest, largest market areas.*

The concept of a rational service area has been used in analysis of National Center for Health Statistics data to study the relationship of health care resources and the use of health care. For example, data from the National Health Interview Survey (HIS) have been used to analyze the relationship between physician supply and use of physician services based on utilization data from the HIS and birth records. Individuals were categorized according to the physician supply in their service area of residence and a categorical data analysis was carried out. Diane Makuc and colleagues compared how Health Care Commuting Areas (HCCA) and two other types of rational service areas could also serve as primary care areas.

Interest in rational service areas continues to the present. The Proposed Rules for Designation of Health Professional Shortage Areas (HPSA) and Medically Underserved Areas and Populations (MUA/P) says that States will be encouraged to define a complete set of rational service areas covering its territory. A national study, Development and Evaluation of Primary Care Service Areas, was recently funded by the Bureau of Health Professions. The purpose of the project is to Adefine and develop small, standardized geographic units for the entire Nation that delineate the actual delivery of primary care clinical services@.

Report No. 78-03

[6] Mathematica Policy Research, AEvaluation of Health Manpower Shortage Area Criteria@, USDHEW, DHEW Publication No. (HRA) 80-20

[7] Makuc, DM, Kleinman JC, Machlin SR. AEffects of Physician Supply on Use of Physician Services@. In: American Statistical Association 1983 Proceedings of the social statistics section. Toronto: American Statistical Association. 299-303. 1983.

[8] Makuc, DM, Kleinman JC, Pierre MB. AService Areas for Ambulatory Medical Care@. Health Services Research 20 (1): 1-18. 1985

[9] Federal Register, Vol. 63. No. 169, Tuesday, September 1, 1998 pps. 46538-46555

[10] Personal communication, Dr. David Goodman, Center for the Evaluative Clinical Sciences at Dartmouth, Dec. 7, 1999.

Chapter 2: PURPOSE AND METHODOLOGY

The objective of this report is to document and summarize methods, approaches, and rationale used to establish RSAs for primary care services. The purpose of chronicling the experience is to assist those States contemplating the establishment of RSAs. In other words, to learn from the experience of others. The report is timely in that the Proposed Rules for designation of Health Professional Shortage Areas (HPSA) and Medically Underserved Areas and Populations (MUA/P) encourages each State to divide its territory into rational service areas for the delivery of primary care.

Six States with experience in establishing RSAs were surveyed. The various methods, experiences, and results reported by Arizona, California, Maine, Minnesota, Montana, and Washington form the basis of the report. A questionnaire was distributed to the Primary Care Offices in the six States in September of 1999. Five States opted to submit the completed form in writing, one chose to complete it via telephone interview.

The questionnaire covered the following topics:

- **types of RSAs used by States,**
- **history of RSAs including rationale and establishment dates,**
- **entity(ies) responsible for establishing, monitoring and updating,**
- **process used including the stakeholders involved,**
- **criteria including exceptions and use in rural, urban and frontier areas,**
- **data used, sources, and how data was collected and stored,**
- **process for monitoring and updating,**
- **use of RSAs,**
- **resources used and needed,**
- **what States would have done differently,**
- **advice States would offer to others, and**
- **the overall value, worth, of the effort.**

The completed questionnaires were analyzed and summarized. Follow-up telephone conversations were held for clarification and additional information. Each State reviewed its written summary to assure accuracy.

Chapter 3: RATIONAL SERVICE AREAS

Rational service areas are used to better identify the major health needs and explore ways to meet those needs including the need for health providers. It is incorrect to assume that all the residents of a State need the same health services in the same proportions and quantities. Differences in age and sex composition alone imply different health needs. Many other health related characteristics of a population also need to be included in the total assessment of the needs of an area. RSAs are used for services other than primary care such as hospital services, long-term care, behavioral health, dental, etc. The relative

sizes of particular areas will depend on the needs in question. The more specialized the need the larger the area will be.

Areas can be both descriptive and normative. Areas are descriptive when the major criterion used in their establishment is the availability of service resources such as physicians, hospitals, nursing homes, etc. These, in essence, describe the market areas of providers and facilities. Areas are normative when they include residents who have traditionally related to each other and which should be viewed as one when analyzing a specific kind of health need whether or not current resources are adequate.

Therefore, in addition to using these small areas to identify local health needs and problems, they also form the basis for planning and allocating resources especially health providers to meet those needs. When the health needs are identified within a geographic area, alternative ways to meet those needs can then be explored based on characteristics of the area and its residents. Some areas may not be able to financially support the kinds of provider or facility resources or range of services to meet their needs locally in the same way that other areas might be able to. In these cases, options will need to be considered to assure that the needs of the people are met with accessible, quality health services.

It should be emphasized that the creation of rational service areas in no way implies that residents must seek and obtain services within their areas. The purpose of defining rational service areas is to analyze health needs and to promote planning of needed services to address those needs.

States have established RSAs for a variety of reasons. Arizona, California and Maine developed rational service areas in the 1970s as part of the health planning program. The State laws under which RSAs are currently mandated in California and Maine date back to that time. Arizona began a voluntary effort in the early 1990=s that was conceptually connected to the health planning work but not based on State law. The current efforts of Montana and Minnesota were begun in response to requests from the Division of Shortage Designation (DSD), Bureau of Primary Health Care (BPHC). Washington established Health Service Areas in the early 1990=s as part of a legislative mandate for a comprehensive assessment of health personnel availability.

Below follow summaries (background, resources, criteria, data, and use) of how the six targeted States approached RSA establishment.

ARIZONA

Background

Arizona was subdivided into 105 RSAs, Primary Care Areas (PCA), in 1991. The Primary Care Office (PCO) initiated the effort to improve the ability of the Arizona Department of Health Services to target resources to the most needy areas of the State. The establishment of PCAs led to the revision of State law regarding the designation of Arizona Medically Underserved Areas (AzMUA). The law's revision required a mechanism, the PCA, to assess areas of underservice of the State. There are currently 123 PCAs, of which 24 are American Indian Nations/reservations.

The effort began with the naming of an advisory committee. It was composed of the State Medical Society and Hospital Association, the Primary Care Association, Indian Health Service, medical school, Rural Health Office, Professional Review Organization,

Arizona Academy of Family Practice, county health officers, and the county supervisors. The Advisory Committee set the criteria by which PCA's would be established.

Arizona estimates the cost at $35,000 per year for maintenance. This includes computer operator/analyst and supervisory staff. The initial set-up year used a consultant supervised by PCO staff.

Criteria for Establishing Rational Service Areas

The guiding principle for determining a Primary Care Area was that it represent a geographic area within which most people seek and obtain most of their primary health care. Areas are made up of one or more census tracts.

The specific criteria were:

1. Has a population greater than 5,000 persons
2. Cannot be smaller than a single census tract
3. Must constitute a "rational" medical trade or market area considering topographical, social and political boundaries, and travel patterns. A trade area's boundaries shall:
    a. Fall within the boundaries of a Native American Nation or Reservation
    b. Fall, in rural areas, within a hospital service area as determined by the most recent patient origin information.
    c. Fall within the service area of a community-based health center.
    d. Are, in rural areas, congruent with any health or hospital special tax district.
    e. Fall such that the population center lies at least thirty minutes travel time (by most common mode of transportation) from the next nearest primary care service.
    f. Conform to common travel patterns. Do not transgress routes commonly traveled to reach health or other moderately frequently sought services.
    g. Include a population that perceives that it constitutes a "community of need" for primary care services.

Criteria for urban, rural, and frontier areas are the same. However, in urban areas, exceptions were made for tax districts, and travel time. Arizona defines rural as either a) a county with a population of less than four hundred thousand persons, or b) a census county division with less than fifty thousand persons in a county with a population of four hundred thousand or more persons. It defines frontier as an area with six or fewer residents per square mile. The PCAs are useful in rural and frontier areas. However, they are less useful in urban areas where patterns of daily travel and managed care membership greatly influence the primary care seeking patterns of residents.

Data Used for Establishing and Altering Rational Service Areas

Data were provided to the advisory committee for their deliberations. When data was unavailable or inconclusive, especially for determining current primary care seeking patterns, key informants were interviewed. Key informants included providers in the area

as well as staff from the planning and economic development units of county government.

All data is housed and managed at the State Health Department in the same unit in which the Primary Care Office is located. Health status data is not used because so little of it is available at the census tract level.

Data	Source	Frequency of Collection
Population	U.S. Census	Every ten years
Patient Origin	State Health Dept.	Annually
Tax Districts	State Revenue Dept.	When established

Use and Usefulness of Rational Service Areas

The designation of Arizona Medically Underserved Areas (AzMUA) is the principal use of Primary Care Areas. State law stipulates criteria by which areas are designated as underserved. The PCAs that meet the criteria are designated. AzMUA designation is often a requirement for funding from such programs as the Arizona Primary Care Tobacco Tax Program. The federal Division of Shortage Designation accepts PCA's as the basis for consideration of Health Professional Shortage Area designations.

A four-page statistical profile is published each year for each PCA. The profile contains data on:

- Demographics (population, ethnicity, income, education, Medicaid and Medicare enrollment),
- Health Resources (hospital and nursing home beds, primary care clinics, pharmacies, providers),
- Health Services Utilization (hospital days and diagnosis, ambulatory sensitive conditions),
- Health Status (infant mortality, leading cause of death, premature deaths, natality)

Research and grant preparation are activities for which the PCA's are frequently used. County health departments, community-based health clinics, Primary Care Association, Arizona Department of Health Services, State Office of Rural Health, institutional planners, and students are the major users.

CALIFORNIA

Background

The State of California is divided into 487 RSAs, called Medical Service Study Areas (MSSA) and MSSA Urban Subdivisions. These areas, established in 1976, are composed of one or more census tracts. Areas are delineated to represent a cohesive, rational service area within which the population should normally expect to receive

primary care services. MSSAs have been accepted by the Division of Shortage Designation for use in HPSA and MUA/P applications.

The areas are used for purposes of evaluating the need for health care services. The California Health Manpower Policy Commission (CHMPC) established the area boundaries. Many modifications of MSSA boundaries have been made since 1976. Boundaries are considered for revision upon petition to the California Health Manpower Commission and after each decennial census. The Commission acts on a petition for revision after discussion of community and staff comments during a public meeting.

Criteria for Establishing Rational Service Areas

The responsibility for determining and modifying the boundaries of each Medical Service Study Area resides with the CHMPC. The Commission membership has representation from community groups, providers, economic development officials, and hospitals. The Office of Statewide Health Planning and Development, the designated Primary Care Office (PCO), provides staff services to the Commission.

The following guidelines for establishing MSSAs are based on policies used by the Commission:

1. Each MSSA should be composed of one or more complete census tracts.
2. MSSAs should not cross county lines
3. All communities within the MSSA are to be within twenty Aconstructive miles@ (as defined by the Public Utilities Commission) from the largest population center within that MSSA. No one should have to travel more than about thirty minutes to the nearest population center where primary health services should be provided.
4. In the case where a community is further than about thirty minutes from the principal population center within a single census tract, the census tract may be subdivided into its component enumeration districts or aggregations thereof.
5. Urban MSSAs should be subdivided so that their population, where practicable, is in the range of 75,000 to 125,000 persons.
6. MSSA Urban Subdivisions should reflect recognized community and neighborhood boundaries and take into account patterns of population such as ethnicity and income.
7. MSSA Urban Subdivisions over 125,000 should be subdivided, except in those cases where the MSSA subdivision would be less than five (5) square miles in area.
8. MSSA Urban Subdivisions that are less than five (5) square miles in area should be combined with appropriate neighboring MSSA Urban Subdivisions.

A rural MSSA is an MSSA adopted by the Commission which has a population density of less than 250 persons per square mile and which has no town within the area with a population more than 50,000. All other areas are considered urban.

Data Used for Establishing and Altering Rational Service Areas

All data is housed and managed at the State Health Department in the Division of Primary Care Resources and Community Development which is part of the Office of Statewide Health Planning and Development.

Data	Source	Frequency of Collection
Population	U.S. Census	Every ten years
Population estimates	Claritas	As needed

The Health Manpower Policy Commission must approve boundary changes to MSSAs. Requests for changes are presented at a public meeting and acted upon at the next regularly scheduled meeting of the Commission

Use and Usefulness of Rational Service Areas

MSSAs are used primarily for the designation of HPSAs and MUA/Ps. MSSAs are also used in the administration of grants for primary care and rural health. MSSAs are useful in urban, rural, and frontier areas. California counties are physically large and some have very large populations. If counties were used for the unit of analysis instead of MSSAs, many underserved areas would not be apparent.

MAINE

Background

The Maine RSAs called Primary Care Analysis Areas (PCAA) were established by order of the Governor in May 1980 upon recommendation of the Maine Health Systems Agency (MHSA). PL93-641 the federal Health Planning and Resource Development Act, under which the Maine Health Systems Agency operated called for the creation of small and rational geographic areas within which health needs could be identified and plans made to address them. In addition to the 62 PCAAs, Maine has RSAs for hospital, dental, behavioral health, vision care, and nursing home services.

The Primary Care Analysis Areas were developed under the guidance of the Plan Development Committee of the MHSA and approved by the Board of Trustees in 1979. The Committee and the Board included representatives of all affected parties including and especially the general public as well as providers, State elected and appointed officials, and universities. A public hearing was held in each of the five regions of the State at which time public comments were elicited and, as appropriate, incorporated into the deliberations of the Plan Development Committee.

Criteria for Establishing Rational Service Areas

The purpose for establishing PCAAs was to define small and rational geographic areas within which health needs could be assessed and ways to address them identified. Guidelines were established for development of PCAAs and included such factors as:

1. Population concentration B An adequate population base is needed to support a full range of primary care services. The ALPHA Center for Health Planning in Syracuse, N.Y. suggests standards of a minimum of 30,000 in urban areas and 15,000 in rural areas.

2. Location of central places within a community.
3. Location and acceptability of roads.
4. Commuting and shopping patterns including Economic Trade Areas and school groupings.
5. Compatibility with political boundaries.
6. Compatibility with service areas used by hospitals and existing primary care resources such as physicians or health centers.
7. Standards from the Health Systems Plan which include:
    a. The availability of services such as health and wellness promotion and prevention services.
    b. The availability of specific services including family planning, venereal disease detection, screening and follow-up services, and prenatal care, and emergency services.
    c. The availability of a primary care health services within 30 minutes travel time except in extraordinary circumstances.

PCAA boundary changes have not been made nor have any been requested. Any proposed changes would be reviewed against the criteria and a public hearing held before a recommendation for change was made to the Governor.

Data Used for Establishing and Altering Rational Service Areas

All data are housed and managed at the State Health Department in the Office of Primary Health Care and the Office of Data and Vital Statistics.

Data	Source	Frequency of Collection
Population	U.S. Census	Every ten years
Patient Origin	State Health Dept.	As needed
Primary care availability	Facility surveys	As needed
Other health service availability	Surveys	As needed

Use and Usefulness of Rational Service Areas

Primary Care Analysis Areas were created to serve as the rational geographic area within which health needs could be meaningfully analyzed. PCAAs allow for the analysis and planning for relatively small geographic areas that are still large enough to permit statistically reliable analyses. PCAAs were the planning units used in the Small Area Variation Analysis of Health Status and Health Care (SAVA), published by the Maine Department of Human Services in 1991 and continue to be used by several agencies Statewide.

When health needs are identified for a small area, service and work force assessments can then follow. PCAAs are used as the basis for consideration of areas for designation of HPSAs and MUA/Ps. Other State agencies collect data by PCAA. PCAAs are viewed to be equally as useful in urban areas as well as in rural and frontier areas.

MINNESOTA

Background

In January 1998, in response to a request from the Division of Shortage Designation, the Minnesota Department of Health=s Office of Rural Health and Primary Care began a process to establish State-wide rational service areas called Primary Care Service Areas (PCSA). The intent was to establish PCSAs for the purpose of HPSA and MUA/P designations. The PCSAs were submitted to DSD for approval in December 1999.

Since neither the Office of Rural Health and Primary Care nor the Department of Health had regulatory or statutory power to make decisions in this arena, they embarked on a consensus building process. Involved in the process were rural health clinics, hospitals, Indian tribes, federally qualified health centers, other community clinics, the Hospital Association, Primary Care Association, and regional health systems. To invite comments, status reports and updates of the process were published in the newsletter of the Office of Rural Health and Primary Care and in letters sent to involved stakeholders and other interested parties. Minnesota estimates the cost at $75,000 over a 24-month period. This included staff time, meeting expenses including travel, and consultants.

Criteria for Establishing Rational Service Areas

Initially, only currently designated HPSAs and MUAs, counties and neighborhoods were considered as PCSAs. After considerable discussion and debate, it was agreed to include as PCSAs a combination of currently designated areas, political subdivisions, market areas and subdivisions, and areas with similar demographics.

Numerous group meetings were held to resolve differences and competing claims to an area. These included two statewide meetings, separate rural and urban gatherings, and some one-on-one meetings. Information provided at these meetings included the results of tests and models of PCSAs, results of facility surveys with information about providers, and models of existing and proposed HPSAs and MUA/Ps. Various approaches and scenarios were discussed employing maps of political subdivisions, facilities, neighborhoods, and demographic characteristics. Comments were continually sought and changes made in order to achieve consensus.

Primary Care Service Areas fall into four categories:

1. Rural Areas
2. Minneapolis/St. Paul
3. Suburbs of Minneapolis/St. Paul
4. Duluth

The rural areas use county and township units. The areas of the suburbs of Minneapolis/St. Paul are based on municipal boundaries. Minneapolis/St. Paul , and Duluth are predominately based on census tracts.

Data Used for Establishing and Altering Rational Service Areas

The Office of Rural Health and Primary Care in the State Health Department collects, stores, and manages all data.

Data	Source	Frequency of Collection

Population	Claritas Census Estimates	1996
Provider availability	Facility Surveys	As Needed
Infant Mortality	Vital Records	Annual
Low Birth Weight	Vital Records	Annual

No formal process has been set in place for changing area boundaries. However, staff does not see the current areas as entirely Apermanent and final@. Additional research is needed for possible refinement of urban areas and for determining the number of providers available for uninsured people.

Use and Usefulness of Rational Service Areas

Primary Care Service Areas are used for shortage designation purposes only. As part of the process of establishing areas, stakeholders required assurances that the establishment of such areas would not lead to broader uses by the State, such as certificate of need.

MONTANA

Background

After new rules clarify expectations regarding special populations, Montana will establish Montana Rational Service Areas for Primary Care Services (MRSAPCS). Areas for behavioral health services already exist and hospital areas are in the process of being established.

The Primary Care Office began the effort of establishing MRSAPCS in response to a request from the Division of Shortage Designation (DSD) and after evaluating the recommendations of the Baucus Committee to Examine and Recommend Changes to the Health Professional Shortage Area Criteria and Process. The latter=s purpose was to make recommendations regarding the HPSA process and criteria that would reflect the needs of frontier States such as Montana.

In February 1998, the PCO formed a committee to guide the process. Committee representation included the Primary Care Association, Hospital Association, Hospital Research and Education Foundation, Maternal Child Health-DPHHS, Montana Area Health Education Center, and the Montana Office of Rural Health. Once the process was determined, the PCO gathered and analyzed the data, and followed up with additional research as needed.

Criteria for Establishing Rational Service Areas

The first step was to identify existing systems of care. In most counties (31), there is only one main population center and only one system of care. These were treated as whole county MRSAPCSs. Areas in which residents went outside the area for primary care were then examined. Nine counties lacked any primary care physicians and have very low population density. These were combined into six multi-county MRSAPCSs. Counties which had more than one primary care delivery system or which presented other barriers such as geographic or cultural were divided into partial county (census division) MRSAPCSs.

The approach was to use counties as the MRSAPCS whenever possible because data were more available and reliable than at the sub-county level. Ease of developing

requests to DSD for designations was also considered in deciding to use counties as the basic unit of analysis. Most counties have one main population center with health facilities and primary care providers. Most of Montana is classified as frontier; six or fewer persons per square mile.

Although Montana has seven American Indian reservations, these were not treated as separate MRSAPCSs. Reservation boundaries do not follow census divisions. Many of the reservations have integrated populations (high numbers of non-American Indian residents), and health systems other than Indian Health Service play an important role.

Factors reviewed for determining MRSAPCS are:

- Population,
- Distance and transportation to closest medical services,
- Geographic and cultural barriers,
- Current health service usage patterns,
- Persons 65 years of age and older, and
- Number and distribution of primary care providers.

Data Used for Establishing and Altering Rational Service Areas

Data regarding population demographics, location and acceptability of roads, commuting and shopping patterns, political boundaries, and travel time, distance and status of transportation systems, all by county, were presented to the committee for its deliberations. Maps were created to show existing primary care resources including hospitals, Medical Assistance Facilities, Rural Health Clinics, Federally Qualified Rural Health Clinics, Indian Health Service sites, HPSAs and MUAs, and primary care physician locations, numbers and ratios. The annual survey of hospitals, hospital representatives on the committee and interviews with facility administrators were utilized to determine market areas. Administrators also provided information on where people went to school, did their shopping, etc. The Primary Care Office maintains all data files.

Data	Source	Frequency of Collection
Population	U.S. Census	Updated regularly
Vital Statistics	DPHHS	Annually
County Health Profiles	Counties	Annually
Providers	Licensing Boards	Annually
	Professional Associations	Annually
Hospital service areas/ patient origin	DPHHS	Annually
Special populations	IHS/Migrant centers	Ongoing
Travel time/mileage	State GIS	Ongoing

At the time a shortage designation is updated, boundaries are reviewed and revised as appropriate. This is also done if a community or area requests it, or other change warrants reevaluation. The Primary Care Office discusses any boundary changes with appropriate parties.

Use and Usefulness of Rational Service Areas

The designation of HPSAs and MUA/Ps is the major use of MRSAPCS. Specifically, they were established to facilitate the designation of large multi-county areas that did not fit the mold of travel time and distances required by the federal regulations. In conjunction with the University of Washington Health Workforce Center, the use of zip code based service areas is being studied. The use of zip codes would allow for integration with other databases such as Medicare.

WASHINGTON

Background

In early 1993, the University of Washington and the State of Washington established a State-wide system of RSAs, named Health Service Areas (HSA), to assist in planning, and policy making. The system is maintained by the Center for Health Workforce Studies (CHWS) at the University but not actively used by the State because it uses zip codes as the unit of analysis and thus not useable for shortage area designation purposes. Notwithstanding, discussions are underway regarding what CHWS data might be used for shortage designations.

The HSA system was developed in response to a legislative mandate for a comprehensive assessment of health personnel supply and demand and as a planning process for institutions of higher education. This effort was known as the Health Personnel Resource Plan (HPRP). The mandate did not specifically call for developing rational service areas but did call for identifying Ashortage areas@.

The WAMI Rural Health Research Center at the University of Washington developed the methodology for HSAs with some assistance from the Office of Community and Rural Health, Washington Department of Health. An interagency planning committee guided the effort whose membership included the Primary Care Office, the Primary Care Association, and the AHECS. Local health jurisdictions were involved in a more limited way. Public comment and review was provided via membership in the various committees and subcommittees of the HPRP. In urban areas, local health jurisdictions participated in the development of HSAs in order to assure that areas were appropriate for local planning purposes.

Washington estimates a per annum cost of $25,000 to maintain the system. Staff caution however, that this investment has not occurred in the last 4-5 years resulting in the system not being properly maintained and updated.

Criteria for Establishing Rational Service Areas

The unit of analysis is zip codes. The setting of boundaries was based largely on the judgement of those involved in the process. The major criterion for determining a rural HSA was that the population be sufficient to support a hospital. In urban areas, there were initially no hard and fast criteria. However, in 1997 some of the urban HSAs were realigned to make them more economically and racially homogeneous.

Data Used for Establishing and Altering Rational Service Areas

Census data was used for population and demographics. Hospital service areas were determined by hospitals. The University of Washington, Center for Health

Workforce Studies (CHWS) keeps and manages all data. The Office of Community and Rural Health keeps summary data only.

The revision of boundaries is an informal process and done as needed, for example when zip codes change. The WAMI Rural Health Research Center has sought input from the Department of Health and local health jurisdictions in the process of boundary revision.

Use and Usefulness of Rational Service Areas

Long-term planning and modeling done by the Center for Health Workforce Studies is the main use of HSAs.

Chapter 4: STEPS IN DEVELOPING STATE-WIDE RATIONAL SERVICE AREAS

Certain steps are followed once the decision has been made to pursue establishment of RSAs. Although presented as steps, there will be overlap among and between them. For example, although data gathering generally follows the decision on an approach, data will be needed for deciding on an approach. Similarly, stakeholders that may not have been identified previously may crop up and need to be asked to participate.

A. Establish an advisory group of stakeholders

It is important that either a majority of State policy makers, key appointed officials, or a critical mass of stakeholders believe the reasons for establishing RSAs outweigh the reasons for not doing so. This support either must exist or be created. The Primary Care Office in each State is the most logical entity to lead the effort. States varied in how they secured stakeholder support. Arizona began with the support of appointed officials and garnered the support of other stakeholders including elected officials who encoded the concept in State law. California and Maine have State laws dating from the 1970s that called for RSAs. Their current efforts were started at that time. Minnesota and Montana created the support of stakeholders through the process of deciding how best to establish RSAs. Washington created RSAs for the purpose of workforce planning as a result of a mandate of the State legislature.

The advisory group is integral to the whole process in which it advises on:

- the general approach or methodology,
- criteria for RSA establishment,
- data to be used, and
- mechanisms for monitoring, reviewing and updating

An advisory group can be assembled by either creating a new group or using an existing one. Montana for example, used the already-existing Primary Care Liaison group. The important thing is that the advisory group membership represents all interested parties or that a mechanism is put in place so that interested parties can be involved at appropriate times. Having a large advisory group but with smaller workgroups that focus on certain topics offers a mechanism for broader involvement. However, the use of workgroups to involve more people may require more staff time. It is especially meaningful that there be involvement of local community people on the

advisory group. Local elected officials or volunteers who participate in local groups operating community based health organizations or local groups seeking improvements in health services are good sources of candidates to represent local communities. Regular contact with stakeholders through meetings, mailings, or newsletters is advised.

B. Decide on an approach

Once an advisory group is in place, deciding on an approach to establish RSAs follows. The most critical element is the criteria for RSA establishment. A variety of criteria can be used. An important consideration is how potential criteria will affect existing provider organizations. Some potential criteria may be seen as negatively impacting certain groups. The criteria may be generally broken down into considerations of:

- ***historical relationships among communities,***
- ***travel times to obtain services,***
- ***economics and availability or need of providers.***

The first type of criteria, historical relationships among communities, assures that communities are clustered in a manner consistent with established patterns for seeking a variety of services, such as health, shopping, and recreation. The second type is established standards applied so that, for the most part, area residents will live within reasonable distances of primary care service providers. The last type recognizes that an area size must in part be dependent upon the population base necessary to support the provision of primary care services and to assure client workloads that will retain providers.

Common criteria used by all states includes:

- ***minimum population,***
- ***travel time,***
- ***geographic and cultural barriers, and***
- ***compatibility with existing service areas and political subdivisions.***

Criteria cannot always be used together and adaptations need to be made. Criteria must be flexible. Exceptions or different applications of the criteria are acceptable as long as stakeholders are involved and the exceptions are reasonable, justified, and explained. Urban, rural and frontier areas present unique challenges and may require different approaches. Arizona=s approach does not seem as satisfactory for urban areas and they continue to explore ways to improve it. California and Maine=s approach seems to work satisfactorily in urban and rural areas alike. Minnesota treated urban areas differently because of the prevalence of managed care. Census tracts and neighborhoods were more heavily relied on. Likewise, more key informant information was used. However, Minnesota feels that more research is still needed in its approach to urban areas. Washington revised their urban criteria to include information on the racial and economic makeup of residents.

The decision on an approach is the most time consuming activity and will be of the most interest to stakeholders since, as mentioned above, the decision can have both

benefits and negative consequences for certain stakeholders. Both advisory group meetings and one-on-one encounters may be needed to assure full discussion and understanding of impact and consequences. Data will be needed to experiment with different criteria. For example, results of applying different minimum population criteria will have to be tested to see the impact on rural and especially frontier areas. Likewise, the impact of managed care organizations (MCO) in urban areas will have to be assessed since the location of their services impacts travel patterns. The existence of MCOs and the concomitant frequent switches in plans result in changes in travel patterns, accessibility, and availability of services and providers.

C. Gather data

Whatever approach and criteria are decided upon, they must be data driven. Data can be collected from a number of sources. Quantitative data such as population and demographics, provider availability, travel times, etc. is necessary. However, qualitative data is equally important. Key informants such as government and facility planners, economic development professionals, school district personnel and social services providers can offer useful insights into service-seeking patterns, perceptions of Acommunity@, etc.

Census geography (census tracts, block numbering areas, census divisions) is the unit of analysis of choice since most of the data needed for establishing and updating is available by census geography. Non census geography based data such as provider location can be electronically converted to census tracts if addresses are available. The 2000 census will use census tracts throughout the country.

Consideration should be given to including data that are easily collected but not necessary for establishing areas but may be useful to stakeholders. Such data might include premature mortality, Ambulatory Sensitive Conditions, income, ethnicity, etc. Data that might be included for this purpose as well as the most useful format for dissemination can be ascertained from advisory committee deliberations.

D. Final approval and Continuous Monitoring and Updating

Final establishment of areas should include broad dissemination of approach and results. States have done this by public hearing activities held in locations that are easily accessible by those who will be impacted. It has also been done via written notices either in newsletters or in special publications that invite public comment.

Once RSAs have been established, regardless of the approach chosen, continuous monitoring and updating of RSA boundaries to reflect changes is necessary. The advisory group should continue to meet on a less frequent but regular basis to provide information on changing conditions. The arrival and departure of providers including downsizing and closing of hospitals, especially in RSAs where they are few in number, requires close monitoring. Socio-economic conditions change, political forces ebb and flow, and changing health needs must be watched for their implications on the rationality of a service area.

An approach to continuous monitoring should be included as part of the overall process. The mechanisms for monitoring may or may not be considered as part of the

initial process but must be decided upon prior to finalizing the entire process. Monitoring should include periodic updating of data used in the establishment of RSAs. Some data elements such as numbers of providers may need to be updated annually, other elements such as population demographics need to be updated only every few years.

Chapter 5: LEARNING FROM THE EXPERIENCE OF OTHER STATES

States were asked what advice they would offer to a State contemplating establishing RSAs and if the effort was worthwhile. Advice to States can be summarized as:

- *Be clear on the purpose for RSAs; be willing and able to answer all questions openly and honestly. Establish a clear, understandable, and predictable process.*
- *State government must provide strong leadership to assure the credibility of the process and integrity to the collection, protection, and storage of data.*
- *Make sure that stakeholders needs and concerns are adequately addressed.*
- *Involve local people, especially in final approval of the approach, including monitoring, and results.*
- *Retain flexibility in the establishment and updating process, and view it as on going with adjustments in boundaries as needs, populations, and systems change.*
- *Create a workable balance between the numbers of stakeholders who want to be involved and the maximum number of people in a work group to assure timely and quality decision making.*

Arizona, California and Maine felt that the effort was worthwhile. Reasons they felt this way included:

- *use of a sub county unit of analysis for qualifying areas as underserved is important to more effectively match resources with needs,*
- *provides for equitable and easy-to-explain rationale for resource allocation, including shortage designation,*
- *facilitates federal shortage designation because service areas have been previously accepted.*

Arizona and Maine felt that establishing RSAs was worth the effort in that much less time is spent in discussing and defending requests for shortage designations. Arizona has benefited from RSA=s because they provide a device whereby areas in the entire State can be compared, one to the other, on a number of dimensions that reflect needs for health services. California has concluded that it was worth the effort because without a subcounty unit of analysis, there would be very few counties that would qualify for HPSA or MUA/P designations. For Minnesota, although it is too early to judge overall worth, the fact that the State now has more useful data is seen as a plus. Minnesota stakeholders remain somewhat concerned regarding what might be the

impact of RSAs on current shortage designations. Montana is hopeful that the establishment of RSAs will make the HPSA or MUA/P designation process easier. Washington does not feel that the effort was worthwhile. Although the approach has resulted in collection of statewide workforce information, it has not resulted in a credible process to establish RSAs. Notwithstanding, it is useful for policy analysis and long-range workforce planning. For one thing, it is based on zip codes, which are not acceptable for HPSA and MUA/P designations. Further, if the Washington Health Service Areas as they are now constituted were to be changed to census tracts they would not result in defining areas whose boundaries would sustain the current shortage designations.

Most States use RSAs for HPSA and MUA/P designations. Arizona also uses them to designate Arizona Medically Underserved Areas (AzMUA) as stipulated in State law and as the basic unit to publish health statistical profiles.

Issues not to overlook

1. Clarity of purpose

The purpose for which RSAs are established must be clearly communicated to all concerned. RSA efforts with a rationale beyond easing the federal designation of shortage areas may be of interest to stakeholders and in general may be seen as more useful because of their broader applicability. This is especially true if the establishment of RSAs is perceived to have possible negative consequences such as jeopardizing existing shortage designations. If RSAs are used for assessment, planning, or resource allocation of services other than primary care; dental, hospital, or mental health for example, the RSAs may be viewed as more useful and acceptable. Efforts are strengthened if they are supported by several offices both within and outside State government which have interests in needs assessments, planning, and improved health services including the increased availability of providers.

2. Broad involvement of stakeholders

The advisory committee structure is the most meaningful step to affirming involvement, building consensus, and providing advice. Likewise, assuring that no important decisions are made without review by those that might be impacted by the decision is important. The latter can be done via public hearings or by distribution of written material for review. During this public review, information can be solicited relative to other data that might be of interest to include. Involvement of stakeholders should not be limited to the initial phase of establishing RSAs but should be maintained for monitoring and especially anytime updates are produced or when the status of an area is under consideration for change.

3. Flexibility in use of criteria and use of RSAs

Flexibility in use of criteria and approach in dealing with the differing circumstances among urban, rural and frontier areas is advised. The same is true when modifying areas once a State-wide system is established. Willingness to review HPSA and MUA/P applications for areas different from RSAs is one example of such flexibility. Conditions change; populations grow, demographics change, new transportation routes or

systems are introduced, etc. Applications for designation of HPSA or MUA/P should be reviewed with an eye toward modification of RSA boundaries. This includes applications for areas different from established RSAs that may reflect changing conditions. In these cases, the applicant must present clear and convincing rationale for consideration of an alternative area. If warranted RSA boundaries should be modified.

It is not necessary that a process for boundary modification be in place at the beginning of the effort to establish RSAs but such a process should be clarified before the establishment process is concluded. Stakeholder interest will dictate this because of their concern of the potential impact on shortage designations. This concern will exist both at initial establishment as well as at time of modifications.

Chapter 6: ADDITIONAL ISSUES

Resources needed to establish and maintain RSAs are an important consideration. Some States did not maintain records adequate to estimate resources used. However, those that did said that the major costs are for staff time for data collection and analysis, and maintaining contact with stakeholders. Arizona estimates the cost at $35,000 per year for maintenance. This includes computer operator/analyst and supervisory staff. Staff with other duties does the RSA related work. Minnesota estimates the cost at $75,000 over a 24-month period. This included staff time, meeting expenses including travel, and consultants. Washington estimates a per annum cost of $25,000 to maintain the system. Washington cautions however, that this investment has not occurred in the last 4-5 years resulting in the system not being properly maintained and updated.

Data should be stored and managed by a government entity, preferably the Primary Care Office. This assures public availability and scrutiny. It may also have the added benefit of the RSA data supplementing data collected by the State health department for other purposes. For example, data gathered for rural health and children=s special health needs projects might be useful for RSA purposes and vice versa.

The data used should be limited to those that are available from public sources. Depending on proprietary entities to voluntarily provide data needed on a regular basis has proven not to be effective. State licensing entities, hospital discharge data, population and demographic data, and vital records information are all public. The volume of data needed requires computerized storage. Any commercial relational database product can be used for this purpose, Paradox, Access, etc.

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